

## ABSTRACT OF DISCLOSURE

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A radiation applicator system is structured to be mounted to a radiation source for providing a predefined dose of radiation for treating a localized area or volume, such as the tissue surrounding the site of an excised tumor. The applicator system includes an applicator and an adapter. The adapter is formed for fixedly securing the applicator to a radiation source, such as a radiosurgery system which produces a predefined radiation dose profile with respect to a predefined location along the radiation producing probe. The applicator includes a shank and an applicator head, wherein the head is located at a distal end of the applicator shank. A proximate end of the applicator shank couples to the adapter. A distal end of the shank includes the applicator head, which is adapted for engaging and/or supporting the area or volume to be treated with a predefined dose of radiation. The applicator can include a low energy radiation filter inside of the applicator head to reduce undesirable low energy radiation emissions. A biocompatible radiation shield may be coupled to the outer surface of the applicator head to block radiation emitted from a portion of the radiation probe, in order to shield an adjacent location or vital organ from any undesired radiation exposure. A plurality of applicators having applicator heads and radiation shields of different sizes and shapes can be provided to accommodate treatment sites of various sizes and shapes.